

ABSTRACT

This invention provides a spherical lens optical immersion probe for use in analysis of solids, liquids, gases, powders, suspensions, slurries, particles and other homogeneous or heterogeneous samples. The use of a spherical lens in an optical immersion probe confers many advantages over traditional immersion probes including ease of use and accuracy of focus. The probe of this invention has applications to many types of optical spectroscopy methods including ultraviolet/visible (UV-Vis), near-infrared (NIR), mid-infrared (FTIR), fluorescence, and Raman spectroscopy. The spherical lens used in this invention is both the optical and sample interface in the analytical system, and may be used to both focus the excitation source and to collecting signal. Importantly, this invention has broad applications to any optical analytical technology that necessitates an optical immersion probe.